

Work, Energy, and Power Practice Problems
CP and Honors Physics

1. How much work is done on a vacuum cleaner pulled 3.0 m by a force of 50.0 N at an angle of 30° above the horizontal? [130 J]
2. A worker pushes a 1500 N crate with a horizontal force of 345 N a distance of 24 m. Assume the coefficient of kinetic friction between the crate and floor is 0.22. How much net work is done on the crate? [360 J]
3. On a frozen pond, a person kicks a 10 kg sled, giving it an initial speed of 2.2 m/s. How far does the sled move if the coefficient of kinetic friction between the sled and the ice is 0.10? [2.5 m]
4. Starting from rest, a child zooms down a frictionless slide from an initial height of 3.0 m. What is her speed at the bottom of the slide, if the child has a mass of 25 kg? [7.67 m/s]
5. An Olympic runner leaps over a hurdle. If the runner's initial vertical speed is 2.2 m/s, how much will the runner's center of mass be raised during the jump? [0.25 m]
6. A person doing a chin-up weighs 700 N, disregarding the weight of the arms. During the first 25 cm of the lift, each arm exerts an upward force of 355 N on the torso. If the upward movement starts from rest, what is the person's speed at this point? [0.265 m/s]